

JSP - DATABASE ACCESS

http://www.tutorialspoint.com/jsp/jsp_database_access.htm

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This tutorial assumes you have good understanding on how JDBC application works. Before starting with database access through a JSP, make sure you have proper JDBC environment setup along with a database.

For more detail on how to access database using JDBC and its environment setup you can go through our [JDBC Tutorial](#).

To start with basic concept, let us create a simple table and create few records in that table as follows:

Create Table

To create the **Employees** table in EMP database, use the following steps:

Step 1:

Open a **Command Prompt** and change to the installation directory as follows:

```
C:\>
C:\>cd Program Files\MySQL\bin
C:\Program Files\MySQL\bin>
```

Step 2:

Login to database as follows

```
C:\Program Files\MySQL\bin>mysql -u root -p
Enter password: *****
mysql>
```

Step 3:

Create the table **Employee** in **TEST** database as follows:

```
mysql> use TEST;
mysql> create table Employees
(
    id int not null,
    age int not null,
    first varchar (255),
    last varchar (255)
);
Query OK, 0 rows affected (0.08 sec)
mysql>
```

Create Data Records

Finally you create few records in Employee table as follows:

```
mysql> INSERT INTO Employees VALUES (100, 18, 'Zara', 'Ali');
Query OK, 1 row affected (0.05 sec)

mysql> INSERT INTO Employees VALUES (101, 25, 'Mahnaz', 'Fatma');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Employees VALUES (102, 30, 'Zaid', 'Khan');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO Employees VALUES (103, 28, 'Sumit', 'Mittal');
Query OK, 1 row affected (0.00 sec)

mysql>
```

SELECT Operation:

Following example shows how we can execute SQL SELECT statement using JTSL in JSP programming:

```
<%@ page import="java.io.*,java.util.*,java.sql.*"%>
<%@ page import="javax.servlet.http.*,javax.servlet.*" %>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>
<%@ taglib uri="http://java.sun.com/jsp/jstl/sql" prefix="sql"%>

<html>
<head>
<title>SELECT Operation</title>
</head>
<body>

<sql:setDataSource var="snapshot" driver="com.mysql.jdbc.Driver"
    url="jdbc:mysql://localhost/TEST"
    user="root" password="pass123"/>

<sql:query dataSource="${snapshot}" var="result">
SELECT * from Employees;
</sql:query>

<table border="1" width="100%">
<tr>
    <th>Emp ID</th>
    <th>First Name</th>
    <th>Last Name</th>
    <th>Age</th>
</tr>
<c:forEach var="row" items="${result.rows}">
<tr>
    <td><c:out value="${row.id}"/></td>
    <td><c:out value="${row.first}"/></td>
    <td><c:out value="${row.last}"/></td>
    <td><c:out value="${row.age}"/></td>
</tr>
</c:forEach>
</table>

</body>
</html>
```

Now try to access above JSP, which should display the following result:

| Emp ID | First Name | Last Name | Age |
|--------|------------|-----------|-----|
| 100 | Zara | Ali | 18 |
| 101 | Mahnaz | Fatma | 25 |
| 102 | Zaid | Khan | 30 |
| 103 | Sumit | Mittal | 28 |

INSERT Operation:

Following example shows how we can execute SQL INSERT statement using JTSL in JSP programming:

```
<%@ page import="java.io.*,java.util.*,java.sql.*"%>
<%@ page import="javax.servlet.http.*,javax.servlet.*" %>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>
<%@ taglib uri="http://java.sun.com/jsp/jstl/sql" prefix="sql"%>

<html>
<head>
<title>JINSERT Operation</title>
</head>
<body>

<sql:setDataSource var="snapshot" driver="com.mysql.jdbc.Driver"
    url="jdbc:mysql://localhost/TEST"
    user="root" password="pass123"/>

<sql:update dataSource="${snapshot}" var="result">
INSERT INTO Employees VALUES (104, 2, 'Nuha', 'Ali');
</sql:update>

<sql:query dataSource="${snapshot}" var="result">
SELECT * from Employees;
</sql:query>

<table border="1" width="100%">
<tr>
    <th>Emp ID</th>
    <th>First Name</th>
    <th>Last Name</th>
    <th>Age</th>
</tr>
<c:forEach var="row" items="${result.rows}">
<tr>
    <td><c:out value="${row.id}"/></td>
    <td><c:out value="${row.first}"/></td>
    <td><c:out value="${row.last}"/></td>
    <td><c:out value="${row.age}"/></td>
</tr>
</c:forEach>
</table>

</body>
</html>
```

Now try to access above JSP, which should display the following result:

| Emp ID | First Name | Last Name | Age |
|--------|------------|-----------|-----|
| 100 | Zara | Ali | 18 |
| 101 | Mahnaz | Fatma | 25 |
| 102 | Zaid | Khan | 30 |
| 103 | Sumit | Mittal | 28 |
| 104 | Nuha | Ali | 2 |

DELETE Operation:

Following example shows how we can execute SQL DELETE statement using JTSL in JSP programming:

```
<%@ page import="java.io.*,java.util.*,java.sql.*"%>
<%@ page import="javax.servlet.http.*,javax.servlet.*" %>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>
<%@ taglib uri="http://java.sun.com/jsp/jstl/sql" prefix="sql"%>

<html>
<head>
<title>DELETE Operation</title>
</head>
<body>

<sql:setDataSource var="snapshot" driver="com.mysql.jdbc.Driver"
    url="jdbc:mysql://localhost/TEST"
    user="root" password="pass123"/>

<c:set var="empId" value="103"/>

<sql:update dataSource="${snapshot}" var="count">
    DELETE FROM Employees WHERE Id = ?
    <sql:param value="${empId}" />
</sql:update>

<sql:query dataSource="${snapshot}" var="result">
    SELECT * from Employees;
</sql:query>

<table border="1" width="100%">
<tr>
    <th>Emp ID</th>
    <th>First Name</th>
    <th>Last Name</th>
    <th>Age</th>
</tr>
<c:forEach var="row" items="${result.rows}">
<tr>
    <td><c:out value="${row.id}"/></td>
    <td><c:out value="${row.first}"/></td>
    <td><c:out value="${row.last}"/></td>
    <td><c:out value="${row.age}"/></td>
</tr>
</c:forEach>
</table>

</body>
</html>
```

Now try to access above JSP, which should display the following result:

| Emp ID | First Name | Last Name | Age |
|--------|------------|-----------|-----|
| 100 | Zara | Ali | 18 |
| 101 | Mahnaz | Fatma | 25 |
| 102 | Zaid | Khan | 30 |

UPDATE Operation:

Following example shows how we can execute SQL UPDATE statement using JSTL in JSP programming:

```
<%@ page import="java.io.*,java.util.*,java.sql.*"%>
<%@ page import="javax.servlet.http.*,javax.servlet.*" %>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>
<%@ taglib uri="http://java.sun.com/jsp/jstl/sql" prefix="sql"%>

<html>
<head>
<title>DELETE Operation</title>
</head>
<body>

<sql:setDataSource var="snapshot" driver="com.mysql.jdbc.Driver"
    url="jdbc:mysql://localhost/TEST"
    user="root" password="pass123"/>

<c:set var="empId" value="102"/>

<sql:update dataSource="${snapshot}" var="count">
    UPDATE Employees SET last = 'Ali'
    <sql:param value="${empId}" />
</sql:update>

<sql:query dataSource="${snapshot}" var="result">
    SELECT * from Employees;
</sql:query>

<table border="1" width="100%">
<tr>
    <th>Emp ID</th>
    <th>First Name</th>
    <th>Last Name</th>
    <th>Age</th>
</tr>
<c:forEach var="row" items="${result.rows}">
<tr>
    <td><c:out value="${row.id}"/></td>
    <td><c:out value="${row.first}"/></td>
    <td><c:out value="${row.last}"/></td>
    <td><c:out value="${row.age}"/></td>
</tr>
</c:forEach>
</table>

</body>
</html>
```

Now try to access above JSP, which should display the following result:

| Emp ID | First Name | Last Name | Age |
|--------|------------|-----------|-----|
| 100 | Zara | Ali | 18 |
| 101 | Mahnaz | Fatma | 25 |
| 102 | Zaid | Ali | 30 |

